

## **IN THE CLAIMS**

*The following listing of claims replaces all previous claim listings and versions.*

### **Cancel Claims 1-27**

**28. ( New)** A method of synchronizing a local transaction database with a remote transaction database, comprising:

receiving from the remote transaction database a single summary hash computed for database records lying in an interval in the remote transaction database;

comparing the single summary hash to a local single summary hash computed for database records lying in a same interval in the local transaction database; and

when the single summary hash does not match the local summary hash, partitioning the interval into at least a first and a second sub-interval and requesting from the remote transaction database a first sub-interval summary hash and a second sub-interval summary hash, the first sub-interval summary hash computed for database records lying in the first sub-interval in the remote transaction database and the second sub-interval summary hash computed for database records lying in the second sub-interval in the remote transaction database,

whereby the local transaction database can avoid synchronization of database records in a sub-interval with a local sub-interval summary hash that matches a sub-interval summary hash received from the remote transaction database.

**29. (New)** The method of claim 28 further comprising the step of:

when the local sub-interval summary hash does not match the sub-interval summary hash received from the remote transaction database, further partitioning the sub-interval into at least a first and a second sub-sub-interval and requesting from the remote transaction database a first and second sub-sub-interval summary hash, the first sub-sub-interval summary hash computed for database records

lying in the first sub-sub-interval in the remote transaction database and the second sub-sub-interval summary hash computed for database records lying in the second sub-sub-interval in the remote transaction database.

**30. (New)** The method of claim 28 further comprising the step of:

when the local sub-interval summary hash does not match the sub-interval summary hash received from the remote transaction database, requesting from the remote transaction database a hash value for each database record lying in the sub-interval.

**31. (New )** The method of claim 28, wherein each database record has a hash value and wherein each summary hash for an interval is computed by combining the hash values for each database record in the interval.

**32. (New)** The method of claim 31, wherein the summary hashes for different intervals are stored in a tree structure.

**33. (New)** The method of claim 32, wherein the tree structure is a B+ tree structure.

**34. (New)** The method of claim 32, wherein the hash values are message digests and wherein the hash values are combined to compute a summary hash by an exclusive or (XOR) of the hash values.

**35. (New)** A synchronizable transactional database comprising:  
a database;  
an interval hash value computing module coupled to the database and configured to compute a summary hash of a plurality of hash values, each hash value associated with a database record lying in an interval of the database; and  
a synchronization module coupled to the database and to the interval hash value computing module, the synchronization module configured to identify database records that need synchronization by comparing a summary hash from the interval hash value computing module computed for database records lying in an interval of the database with a remote summary hash received from a remote transaction database.

**36. (New)** The system of claim 35, wherein the database further comprises a transactional support layer configured to support a storage layer of the database, the transactional support layer further comprising shadow blocks which provides for atomized updates to the storage layer.

**37. (New)** The system of claim 35, wherein the synchronization module is further configured to partition an interval into at least a first and second sub-interval when a summary hash for the interval in the database does not match a remote summary hash so as to seek remote summary hashes for the first and second sub-intervals from the remote transaction database.

**38. (New)** The system of claim 36, wherein the interval hash value computing module computes a summary hash for database records lying in an interval in the database by combining the hash values associated with each database record lying in the interval.

**39. (New)** The system of claim 38, wherein the summary hashes for different intervals are stored in a tree structure.

**40. (New)** The system of claim 39, wherein the tree structure is a B+ tree structure.

**41. (New)** The system of claim 39, wherein the hash values are message digests and wherein the hash values are combined to compute a summary hash by using an exclusive or (XOR) of the hash values.